

Table of Contents

REF: Electrical System	3
Device Connector Pinouts (ECM/ICM/TSM/TSSM/SPEEDO/TACH/Etc)	3
<i>1998-2003 Sport Model - Device Connector Pinouts</i>	3
<i>2004-2017+ Models - Device Connector Pinouts</i>	3

REF: Electrical System

Device Connector Pinouts (ECM/ICM/TSM/TSSM/SPEEDO/TACH/Etc)

1998-2003 Sport Model - Device Connector Pinouts

2004-2017+ Models - Device Connector Pinouts

2004-2006 Sportsters - ECM/TSM/Etc Connections

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-electrical/sportster-motorcycle-electrical-and-ignition/174323-2004-2006-wiring-info?t=1869052>

ICM position numbers – purpose – wire color

- 1 run/stop w/bk
- 2 battery bn/gy
- 3 +5 sensor power r/w
- 4 sensor ground bk/w
- 5 module ground bk
- 6 coil, front be/o
- 7 coil, rear y/be
- 8 crank position sensor + r
- 9 crank position sensor - bk
- 10 vehicle speed sensor w/gn
- 11 MAP signal v/w
- 12 Serial Data Link lgn/v

TSM/TSSM

- 1 battery bn/gy
- 2 ignition gy
- 3 Serial Data Link lgn/v
- 4 security indicator
- 5 left turn output v
- 6 right turn output bn
- 7 right turn input w/bn
- 8 left turn input w/v

9 starter relay control tn/gn
10 ignition enable switch
11 alarm signal lgn/bn
12 ground bk

Speedo (numbers are left-right)

12 blank
11 trip switch bk (to 8)
10 blank
9 blank
8 trip switch (to 11)
7 ground bk
6 accessory o/w
5 battery bn/gy
4 security bn/v
3 blank
2 Serial Data Link lg/v
1 ignition o

Tach

1 ignition o
2 Serial Data Link lg/v
3 blank
4 blank
5 battery bn/gy
6 accessory o/w
7 ground bk
8 blank
9 blank
10 blank
11 blank
12 blank

2007-2013 Sportsters - ECM/TSM/Etc Connections

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-electrical/sportster-motorcycle-electrical-and-ignition/174324-2007-2013-wiring-info?t=1869053>

ECM position numbers – purpose – wire color

1 blank
2 system relay gn/o
3 blank
4 blank
5 Serial Data Link lgn/v
6 engine temperature pk/y
7 intake air temp lgn/y

8 front oxygen sensor (A) pk/o
9 jiffy stand switch (HDI only) gn/bn
10 power ground bk
11 coil, rear y/be
12 crank position sensor (-) bk
13 switched power w/bk
14 5V sensor power r/w
15 blank
16 blank
17 idle air control (A) high bk/o
18 idle air control (B) low bk/pk
19 fuel injector, rear gn/gy
20 blank
21 fuel injector, front w/y
22 blank
23 rear oxygen sensor pk/gn
24 throttle position sensor input gy/v
25 TMAP sensor input v/w (TMAP replaced MAP in 2010)
26 5V sensor ground bk/w
27 blank
28 power ground bk
29 coil, front be/o
30 crank position sensor (+) r
31 battery be/gy
32 blank
33 vehicle speed sensor input bk/be
34 blank
35 idle air control (A) low be/gn
36 idle air control (B) high bn/r

TSM/TSSM

1 battery bn/gy
2 ignition gy
3 Serial Data Link lgn/v
4 neutral safety switch tn (formerly security indicator on 2004-2006)
5 left turn output v
6 right turn output bn
7 right turn input w/bn
8 left turn input w/v
9 starter relay control tn/gn
10 clutch control bk/r (formerly ignition enable switch on 2004-2006)
11 alarm signal lgn/bn
12 ground bk

Speedo (numbers are left-right)

12 blank
11 trip switch bk (to 8)
10 blank

9 fuel y/w (formerly blank on 2004-2006)
8 trip switch (to 11)
7 ground bk
6 accessory o/w
5 battery bn/gy
4 blank (formerly security on 2004-2006)
3 blank
2 Serial Data Link lg/v
1 ignition o

Tach

1 ignition o
2 Serial Data Link lg/v
3 blank
4 blank
5 battery bn/gy
6 accessory o/w
7 ground bk
8 blank
9 blank
10 blank
11 blank
12 blank

2014-later - Utilizing CANbus communications

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-electrical/sportster-motorcycle-electrical-and-ignition/186702-canbus-major-connections?t=1995444>

(Thanks to schematics supplied by JauntyBishop, Sportsterdoc posted this information.)

ECM-bank one

1. Rear ignition coil gray/blue
2. Front ignition coil green/blue
3. Front heated oxygen heater ground black/orange
4. VSS input light green/yellow
5. Front fuel injector green/yellow
6. Rear fuel injector gray/yellow
7. MAP input gray
8. JSS signal light green/gray
9. ION sensor light green/brown
10. Sensor ground black/gray
11. No position
12. No position
13. CAN lo white/black

14. CAN hi white/red
15. Rear heated oxygen heater ground black/pink
16. CKP sensor hi red
17. Front heated oxygen sensor green/brown
18. CKP sensor lo black

ECM-bank two

1. IAC A hi green/orange
2. Blank
3. Blank
4. Blank
5. Blank
6. IAT green/gray
7. 5v sensor ground black/white
8. ET sensor green
9. 5v sensor power red/white
10. Sensor ground black/green
11. IAC A lo gray/orange
12. IAC B hi green/white
13. IAC B lo gray/white
14. Blank
15. TPS green/violet
16. System power red/green
17. 17. Rear heated oxygen sensor gray/brown
18. Battery fuse red/orange

BCM

1. Battery power red
- A2. Security antenna hi red
- A3. Start enable white/brown
- A4. Security RF antenna black
- B2. Security antenna lo black
- C3. Ignition switch input white/blue
- C4. Ignition stop switch input white/gray
- D2. CAN hi white/red
- D3. Neutral switch input white
- E2. CAN lo white/black
- E3. Oil pressure switch input white/orange
- E4. Horn power red/violet
- F3. Brake switch input blue/green
- F4. Fuel pump power red/brown
- G4. Sensor ground black/green
- H2. Security Siren white/green
- J2. Front right turn signal blue/orange
- J3. Running light power blue
- J4. Front left turn signal blue/pink
- K2. Right rear turn signal blue/brown
- K3. Brake lamp power blue/red

K4. Left rear turn signal blue/violet
L2. Starter solenoid power red/black
L4. Front running/fog lights power red/green
M2. Accessory power red/yellow
M3. Hi beam power blue/white
M4. Low beam power blue/yellow

SPEED0 CONNECTIONS (in order from factory schematics)

8. CAN hi white/black from ECM 13
2. CAN lo white/red from ECM 14
4. Hi beam indicator blue/white
5. Battery red/orange
6. Neutral indicator white
7. Sensor ground black/green
1. Oil pressure white/orange
9. Fuel level white/yellow
10. Left turn indicator blue pink
12. Right turn indicator blue/orange

IGNITION SWITCH

white/blue from BCM C3
black/green to BCM G4
...involving 800 ohm and 200 ohm resistors

ANTI-THEFT Connections

D black/green sensor ground
C white/black start enable to BCM A3
B blank
A blank
A red/orange power
B white/green signal to BCM H2
C black ground

Optional - ABS ECU

18 red battery power
14 orange/brown rear WSS lo
13 orange/pink rear WSS hi
12 orange/blue front WSS hi
11 white/black CAN lo
10 black sensor ground
9 red battery power
4 blue/black switch auxillary lamp power
3 orange/black front WSS lo
2 white/red CAN hi
1 black/green sensor ground

(This section contributed by Sportsterdoc)

[Go To Technical Menu](#)

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